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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Lovell-Badge et al.

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Entitled:

CELL LINEAGE MARKERS

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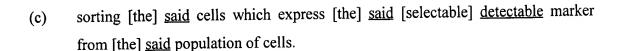
MARKED UP AMENDED CLAIMS

Sir:

Please amend the following claims as follows.

- A method for isolating a pluripotent cell which is at least partially committed to a given 1. developmental pathway, comprising the steps of:
 - (a) selecting a population of pluripotent cells;
 - detecting Sox gene expression (b)_
 - [(b)] (c) sorting the cells according to Sox gene expression; and
 - [(c)] (d) isolating those cells which express a [given] Sox gene.
- The [A] method [according to] of claim 1, wherein [the] said population of cells [for] is 2. derived from CNS tissue.
- The [A] method [according to] of claim 1, wherein [the] said population of cells is 3. derived from a cell culture.

- 4. The [A] method [according to any preceding] of claim 1, wherein [the] said [expression of the] Sox gene expression is detected by nucleic acid hybridization.
- 5. The [A] method [according to any one] of claim[s] 1 [up to 3], wherein [the] said [expression of the] Sox gene expression is detected by [a] binding of a SOX polypeptide or a SOX nucleic acid corresponding to mRNA to a detectable ligand.
- 6. [A] The method [according to] of claim 5, wherein [the] said detectable ligand is a labeled immunoglobulin.
- 7. [A] <u>The</u> method [according to] <u>of</u> claim 5, wherein [the] <u>said</u> detectable ligand is a labeled oligonucleotide complementary to *Sox* mRNA.
- 8. [A] <u>The method [according to any preceding] of claim 1</u>, wherein [the expression of the] <u>said Sox gene expression</u> is detected by FACS analysis.
- 9. A method for isolating a desired cell type from a population of cells, comprising the steps of:
 - (a) transfecting [the] said population of cells with a genetic construct comprising a coding sequence encoding a detectable marker operatively linked to control regions sensitive to modulation by a SOX polypeptide;
 - (b) detecting the cells which express [the] said [selectable] detectable marker; and
 - (c) sorting [the] <u>said</u> cells which express [the] <u>said</u> [selectable] <u>detectable</u> marker from [the] <u>said</u> population of cells.
- 10. A method for isolating a neuroblastic cell from a population of cells, comprising the steps of:
 - (a) transfecting [the] <u>said</u> population of cells with a genetic construct comprising a coding sequence encoding a detectable marker operatively linked to a control sequence which is transactivatable by a SOX polypeptide;
 - (b) detecting the cells which express [the] said [selectable] detectable marker; and



- 11. [A] The method [according to] of claim 9 or claim 10, wherein [the] said [selectable] detectable marker is a fluorescent or luminescent polypeptide.
- 12. [A] The method [according to] of claim 9 or claim 10, wherein [the] said [selectable] detectable marker is a polypeptide detectable at the surface of the cell.
- 13. A method for producing a cell committed to a specified lineage, comprising the steps of:
 - (a) transfecting a pluripotent stem cell with a genetic construct comprising a coding sequence expressing a SOX polypeptide;
 - (b) culturing [the] said stem cells in order to differentiate them into neural cells; and
 - (c) isolating [the] said neural cells thereby produced.
- 14. [A] The method [according to] of claim 1[5]3, wherein [the] said [Sox] coding sequence expressing a Sox polypeptide is operatively linked to an inducible promoter.
- 15. [A] <u>The</u> method [according to] <u>of</u> claim 13 or claim 14, wherein [the] <u>said</u> cell is further transfected with a vector comprising a sequence encoding a regulator which [modulates] <u>regulates</u> the expression of the *Sox* sequence.
- 16. [A] The method [according to any preceding] of claim 1, 9 or 13, wherein [the] said Sox gene is a member of Sox Group A.
- 17. [A] The method [according to] of claim 16, wherein [the] said Sox gene is Sox1 or Sox2.